



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,994	02/02/2001	Kevin Eugene Dombkowski	LUC-300/Dombkowski 7-4	7453
47382 7590 07/19/2007 PATTI, HEWITT & AREZINA LLC ONE NORTH LASALLE STREET 44TH FLOOR CHICAGO, IL 60602			EXAMINER VAN HANDEL, MICHAEL P	
			ART UNIT 2623	PAPER NUMBER
			MAIL DATE 07/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/775,994

Applicant(s)

DOMBKOWSKI ET AL.

Examiner

Michael Van Handel

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 21-36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 21-36, 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Miscellaneous

1. Please note that the examiner of record has changed.

Response to Amendment

1. This action is responsive to an Amendment filed 4/20/2007. Claims **1-12, 21-36, 38** are pending. Claims **1, 21, 28** are amended. Claims **13-20, 37** are canceled.

Response to Arguments

1. Applicant's arguments regarding claims **1, 21, and 28**, filed 4/20/2007 have been fully considered, but they are not persuasive.

Regarding claims **1, 21, and 28**, the applicant argues that Gummalla et al. does not teach limiting the use of echo cancellation and jitter buffering. The examiner respectfully disagrees. Gummalla et al. discloses a CMTS 102 that automatically grants bandwidth to cable modem 104, because voice traffic cannot tolerate delays in transfer (p. 2, paragraph 39). The CMTS has a CMTS scheduler 102 that decides how to grant available bandwidth according to current bandwidth requests. This ability to decide how to grant bandwidth provides flexibility, allowing the overhead involved in granting bandwidth to cable modem 104 via downstream communication to be reduced (p. 3, paragraph 48). Gummalla et al. further discloses allowing a voice activity detector to indicate to a MAC layer as soon as a call is active. As a result, the MAC layer can start the process of reactivating the unsolicited grant service stream half a

Art Unit: 2623

packetization interval earlier. This early indication helps to reduce the jitter in reactivating the voice call when it transitions from active to silent (p. 5, 6, paragraph 93). It is inherent that with less jitter, the amount of jitter buffering necessary is limited. Thus, the examiner maintains that Gummalla et al. teaches limiting the use of jitter buffering, as claimed. Furthermore, Sala et al. discloses that cable modem 104 can reduce the latency of higher-priority services (such as voice)(p. 4, paragraph 56). Sala et al. also indicates that packet headers add packet overhead that requires more bandwidth or causes packet latency (p. 1, 2, paragraph 19). The examiner notes there is an inherent relationship between network delay and echo. This is evidenced in the Background of the Invention section of Applicant's specification, which states that cable operators deploying real-time voice applications on cable protocols need to support compensation for added delay by supporting echo cancellation (p. 1, l. 31-32). Thus, by limiting network and packetization delay as indicated above, Gummalla et al. and Sala et al. are inherently limiting echo and the amount of echo cancellation necessary. Thus, the examiner maintains that Gummalla et al. and Sala et al. (incorporated by reference) meet the limitation of "while limiting use of echo cancellation and jitter buffering," as currently claimed.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2623

2. Claims **1-12** and **21-36** are rejected under 35 U.S.C. 102(e) as being anticipated by Gummalla et al. in view of Sala et al., which is incorporated in Gummalla et al. by reference (Gummalla et al. p. 1, paragraph 10).

Referring to claims **1**, **21**, and **28**, Gummalla et al. discloses a method/apparatus comprising the steps of:

- sending one or more upstream signals as pulse code modulated data without packet headers (Gummalla et al. p. 3, 4, paragraph 54) using an upstream cable protocol (using a CMTS)(Gummalla et al. p. 1, paragraph 18 & p. 2, paragraph 40);
- sending one or more downstream signals as pulse code modulated data without packet headers (Gummalla et al. p. 3, 4, paragraph 54) using a downstream cable protocol (using a CMTS)(Gummalla et al. p. 1, paragraph 18 & p. 2, paragraph 40); and
- enclosing the one or more downstream signals as the pulse code modulated data without application-level packet headers in a Motion Pictures Experts Group (MPEG) transport (Sala et al. p. 2, paragraph 37 & p. 3, paragraph 43), while limiting the use of echo cancellation and jitter buffering (both Gummalla et al. and Sala et al. reduce the latency of voice communications, thereby limiting the inherent echo and jitter that result from latency. It is inherent that the use of echo cancellation and jitter buffering are limited when receiving a limited amount of echo and jitter)(Gummalla et al. p. 2, paragraph 39; & p. 3, paragraph 48; p. 5, 6,

paragraph 93)(Sala et al. p. 1, 2, paragraph 19; p. 3, paragraph 51; p. 4, paragraphs 56, 61, 62).

Further referring to claim 28, Gummalla et al. discloses a sampler (CM scheduler 114) that yields PCM data (i.e. burst) and a transport device (burst multiplexer 116) that transports downstream signals (CMTS 102)(Sala et al. Fig. 1).

Referring to claims 2 and 29, Gummalla et al. discloses the method/apparatus of claims 1 and 28, respectively, wherein the upstream protocol is Data-Over-Cable System Interface Specification (DOCSIS) (Gummalla et al. p. 3, paragraphs 46, 47 & p. 4, paragraph 61)(Sala et al. p. 4, paragraph 55).

Referring to claims 3 and 30, Gummalla et al. discloses the method/apparatus of claims 1 and 28, respectively, wherein the step of sending one or more upstream signals comprises mapping one or more pulse code modulated samples of the one or more signals taken at a sampling interval to an allocation of mini-slots in the upstream protocol (Gummalla et al. p. 4, paragraphs 61-65 & p. 5, paragraphs 73, 74, 76, 80-56)(Sala et al. p. 2, paragraph 37).

Referring to claims 4 and 31, Gummalla et al. discloses the method/apparatus of claims 3 and 30, respectively, wherein the sampling interval is 125 microseconds (Gummalla et al. p. 2, paragraph 40) and the mini-slots occur at 6.25 microsecond intervals (it is inherent that mini-slots occur every 6.25 microseconds according to the DOCSIS standard)(Gummalla et al. p. 2, paragraph 37 & p. 4, paragraphs 61-65).

Referring to claims 5 and 32, Gummalla et al. discloses method/apparatus of claims 1 and 28, respectively, further comprising the step of multiplexing two or more signals in one mini-slot in the upstream protocol (bursts are assigned or allocated by mini-slots and burst multiplexer 116

multiplexes packets from two or more signals into a burst)(Sala et al. p. 2, paragraph 37; p. 3, paragraph 44; & Fig. 1).

Referring to claims 6 and 22, Gummalla et al. discloses the method of claims 1 and 21, respectively, wherein the downstream protocol is Data-Over-Cable Interface Specification (DOCSIS)(Gummalla et al. p. 2, paragraph 39 & p. 3, paragraph 46).

Referring to claims 7 and 23, Gummalla et al. discloses the method of claims 1 and 21, respectively, wherein the step of sending one or more downstream signals comprises mapping one or more pulse code modulated samples of the one or more signals taken at a sampling interval to a Motion Pictures Experts Group (MPEG) transport layer (Sala et al. p. 2, paragraphs 37-39 & Fig. 1).

Referring to claims 8 and 24, Gummalla et al. discloses the method of claims 1 and 21, respectively, wherein the step of sending one or more downstream signals comprises multiplexing multiple signals within a single Motion Pictures Experts Group (MPEG) packet identifier 100 (MPEG packets carried over the downstream inherently have audio, video, and voice data multiplexed into a downstream channel in which the MPEG packets share a common packet identifier according to the MPEG standard)(Sala et al. p. 2, paragraphs 37-39 & Fig. 1).

Referring to claims 9 and 36, Gummalla et al. discloses the method/apparatus of claims 1 and 28, respectively, wherein the method is performed in a cable system having a media terminal adapter (MTA)(cable modem 104)(Gummalla et al. p. 2, paragraph 38 & Fig. 1), such that subscriber signaling functionality is reduced in the MTA (it is inherent that the associated media terminal adaptor would have decreased hardware functionality by virtue of transmitting the data

Art Unit: 2623

without headers, thereby obtaining significant bandwidth savings)(Gummalla et al. p. 3, paragraphs 51-54).

Referring to claims 10, 25, and 33, Gummalla et al. discloses the method/apparatus of claims 1, 21, and 28, respectively, wherein the method reduces throughput delay and jitter for signals, thereby improving signal quality over existing transport methods (Gummalla et al. p. 5, paragraph 93).

Referring to claims 11, 26, and 34, Gummalla et al. discloses the method/apparatus of claims 1, 21, and 28, respectively, wherein at least one of the one or more upstream signals and the one or more downstream signals is a voice signal (the data exchanged between CMTS and cable modems includes text, video, audio, voice, graphics, other media, or a combination thereof)(Gummalla et al. p. 4, paragraphs 56 & Fig. 1)(Sala et al. p. 3, paragraph 43 & p. 4, paragraph 53).

Referring to claims 12, 27, and 35, Gummalla et al. discloses the method/apparatus of claims 1, 21, and 28, respectively, wherein at least one of the one or more upstream signals and the one or more downstream signals is a video signal (the data exchanged between CMTS and cable modems includes text, video, audio, voice, graphics, other media, or a combination thereof)(Sala et al. p. 3, paragraph 43 & p. 4, paragraph 53).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2623

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gummalla et al. in view of Limb et al.

Referring to claim 38, Gummalla et al. discloses the method of claim 1. Gummalla et al. does not specifically disclose that the step of sending one or more upstream signals comprises sending the one or more upstream signals as PCM data in a form that allows transfer to PSTN without transcoding the pulse code modulated data of the one or more upstream signals. Limb et al. discloses a step of sending one or more upstream signals that comprises sending the one or more upstream signals as PCM data in a form that allows transfer to PSTN without transcoding the pulse code modulated data of the one or more upstream signals (col. 3, l. 55-67; col. 4, l. 1-36; & Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gummalla et al. with the teaching of Limb et al., so as to facilitate communication between near end data devices (i.e., HFC network and far end PSTN 150) by just routing the PCM data using a based network router.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 2623

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Van Handel whose telephone number is 571-272-5968. The examiner can normally be reached on 8:00am-5:30pm Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVH


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600